Institutional Memory and the US Air Force

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> *No modern war has been won without air superiority.*
> —Gen T. Michael Moseley, 2007

Although the vague term *modern war* leaves some question about the wars General Moseley was referring to, his 2007 white paper raises questions regarding airpower's impact and historical record, especially in light of the two conflicts that consumed the US military at the end of that year.[1] The question of whether or not air superiority is vital to successful military operations is nothing new; indeed, arguments concerning the utility of American airpower have raged in earnest for over 100 years. No technological milestone such as the atomic bomb, supersonic flight, precision-guided weapons, or even stealth has settled the debate about where Airmen and airpower fit in the dialogue of national defense. After each advance is tested in combat, a new round of intellectual sparring commences regarding

the effect of airpower. Though hugely useful in the development of military thinking, these differing schools of thought have always returned to fundamental questions, the answers to which vary widely depending on the strategic context of the day. How does airpower best contribute to the joint force? Is airpower a supporting arm, or is it supported by the other services? Can airpower alone achieve strategic effects? The answers are more than academic; they shape the Air Force's policy decisions, affect joint operational planning, and give political decision makers a wide range of options to consider in their responses to crises at home and abroad.

Since the answers are also interconnected, at times paradoxical, and dependent on a deep understanding of the global strategic context, it is imperative that the Air Force develop and maintain a coherent vision for how airpower can contribute to national security objectives. At odds with this consistent dialogue are a number of factors: most importantly, the service's institutional memory of how it fights and what it fights with—the ways and means of war fighting. Critical to maintaining its competitive edge over the rest of the world, the service's institutional memory is nevertheless heavily influenced by what this article proposes as two central factors: (1) the preferred "American Way of War" and (2) the enormous influence of Operation Desert Storm on how the Air Force views its role as part of the joint force. Although highly debatable, often considered, and rarely put into practice, the "American Way" desired by the US military is total war—one that is over quickly. The military's history, record of success, and current acquisition policies, coupled with how it is organized, trained, and equipped, all point to a force designed for a decisive contest. Compounding this facet of the Air Force's institutional memory is the brilliant success of air operations during Desert Storm, which has resulted in ingrained practices at the tactical and operational levels that are not always fit for the purpose at hand. This article, therefore, explores the concept of institutional memory and explains how these two factors contribute to the service's institutional memory and influence decision making at all levels.

Institutional Memory

Complex organizations often struggle with gaining and maintaining institutional memory. A term often used interchangeably with *institutional knowledge* and *organizational memory, institutional memory* is defined as a "collective set of experiences, lessons learned and best practices that a person or a group of people in the workplace have accumulated over time."[2] Codifying the collective lessons and experiences of a disparate group of personnel with frequent turnover is no easy task, but the Air Force has unique tools at its disposal. Most notable among them are service doctrine and collective experience. Including both the tactics, techniques, and procedures of an individual weapons system and the capstone joint publications series issued by the chairman of the Joint Chiefs of Staff, doctrine is one of the central reservoirs of institutional memory for the American military. Additionally, with more than 600,000 members in the Air Force, Air Force Reserve, and Air National Guard, the total force holds an immense trove of operational experience that is utilized to reconstitute its manpower. This expertise, together with the world's best

training opportunities, allows the Air Force to pass its hard-earned institutional knowledge from one generation of Airmen to another. Many large civilian and government entities may struggle to preserve institutional memory, but the Air Force excels. Total war as the true and only "American Way" of war is an overstatement; however, it is the primary influence on the ways and means that the service develops for a number of reasons, beginning with the birth of the modern American military during World War II.

Total War and Desert Storm

Because they threatened national survival, World War II and the subsequent Cold War forced the US military first to wage and then constantly prepare for total war. For the US Air Force, this preparation meant that for the first four decades of its existence, it was primarily organized, trained, and equipped to fight war on a global scale. In the midst of this readiness, facing a limited war in Vietnam, the service was slow in adapting its tactics, albeit as part of a woefully insufficient strategy. Ultimately, the Air Force concluded that a more total war–like effort, as demonstrated in Operation Linebacker II, could have changed the course of the conflict. Over time, this consistent focus morphed into an institutional memory, resulting in constant preparation for high-end warfare against a near-peer adversary. Although this procedure paid huge dividends in Desert Storm, the Air Force faces a significant challenge in balancing the demands of a complex global security landscape with those of an uncertain future. Arguably, the genesis of this theoretical mind-set and practical application is World War II, but its current form is influenced by a renowned strategist whose effect on US military thinking remains unsurpassed.

The modern conception of total war emerged from Napoleon's ability to harness both the passion of the newly liberated French mind and the resources of the state through his *levée en masse*. Carl von Clausewitz, the world's most famous observer of the Napoleonic Wars, described war as "an act of force, [and] Clausewitz could discern no logical 'internal' or self-imposed limit on the use of force."[3] When read selectively or uncritically, the Prussian's writings can easily be interpreted as an endorsement of total war. During the interwar period, British military strategist B. H. Liddell-Hart actually blamed Clausewitz and his opus *On War* for the costly strategy of the Western Front: "He was the source of the doctrine of 'absolute war,' the fight to a finish theory. . . . Clausewitz looked only to the end of war, not beyond war to the subsequent peace."[4] If Liddell-Hart is to be believed, any strategist who follows the teachings of Clausewitz runs the risk of a implementing a misplaced emphasis on total war. Interestingly, in the aftermath of Vietnam, the Air Force reinvigorated its total war concepts, developing a renewed theoretical underpinning in which Clausewitz emerged as a key influence on both strategy and professional military education.

On War's impact has spread far beyond a handful of military historians or "bookish" officers; rather, it is the foundational text of American military thought, as described by Phillip Meilinger: "Clausewitz has become an icon among military officers of all the services, and his ideas are taught in every war college, staff college, and service

academy in the country. It is common for a military writer or briefer to begin or end an argument with a quote from Clausewitz, presumably lending the author/speaker an aura of credibility."[5] Renowned Cold War theorist Bernard Brodie describes the unfortunate truth behind this obsession, lamenting that Clausewitz "has been rarely read, more rarely understood, but abundantly quoted."[6] Liddell-Hart's aforementioned critique of Clausewitz, though clear, actually echoed these words: "Not one reader in a hundred was likely to follow the subtlety of his logic or to preserve a true balance among such philosophical jugglery."[7] Despite this reputation of misleading readers, especially with regards to the totality of war, *On War* consistently reveals incredible nuance. Clausewitz's logic is exemplified as his dialectical method acknowledges a vast gap between "absolute war" (total war) and "real war": "The more powerful and inspiring the motives for war . . . the closer war will approach its abstract concept . . . the more closely will the military aims and the political objects of war coincide, and the more military and less political will war appear to be."[8]

Note how Clausewitz labels a move towards total war as one that approached its "abstract concept," acknowledging the rarity of this form of conflict. His writings reveal that "real war" is clearly something less than total war since the absolute form is the extreme exception rather than the rule. In light of the frustrating incremental nature of the Vietnam air campaign, it is easy to understand why the military and the Air Force gravitated to the selected portions of *On War* that seemingly called for adherence to a total war doctrine whereby overwhelming military force is the key to victory. Has an institutional memory that focuses on this type of warfare, coupled with a new intellectual foundation built on misinterpretations of Clausewitz, reinforced the notion that the Air Force must prepare for total war through the acquisition of advanced technology? According to National Defense University, "Organizations can have inadequate memories of success and failure because leaders develop processes to address immediate issues, but fail to evaluate if these processes have future value."[9] Misleading institutional memory, therefore, springs from not properly analyzing the circumstances that led to either success or failure. In the case of the Air Force, a stunning victory in Desert Storm heavily influenced the subsequent 25 years for two important reasons. First, a failure to fully appreciate (or acknowledge) the distinctive characteristics of the war to liberate Kuwait led to the incorporation of incomplete lessons into the Air Force's doctrinal thinking. Second, the incredibly effective (and globally broadcast) use of both stealth and precision-guided munitions reinforced the Air Force's emphasis on technological superiority, which influences decisions to this day.

Doctrine is imperfect and demands constant scrutiny, as demonstrated by the long road that led to the production of Field Manual (FM) 3-24 / Marine Corps Warfighting Publication (MCWP) 3-33.5, *Counterinsurgency*, the US Army's counterinsurgency (COIN) doctrine, released in December 2006.[10] As Iraq spiraled into chaos following the conventional war-fighting phase, the US military quickly found its institutional memory, in the form of COIN doctrine, utterly insufficient for the task at hand. Under the leadership of then–lieutenant general David Petraeus, the US Army and US Marine Corps collaborated on FM 3-24/MCWP 3-33.5 to capture the newfound experience of their collective institutions while simultaneously reviving critical, long-forgotten lessons of COIN. Following its release and General Petraeus's widely hailed imple-

mentation of a COIN strategy during the 2007–8 "surge" of forces in Iraq, FM 3-24/ MCWP 3-33.5 became a must-read for Soldiers, scholars, and average Americans alike. Arguably, never before had military doctrine featured so prominently in America's national consciousness. Despite the unprecedented success of FM 3-24/ MCWP 3-33.5 in both popular culture and in practice, an important point, as noted by John Nagl, is that doctrine is a "trailing indicator" of institutional learning.[11] It is therefore essential that a service ground its doctrine in contextual understanding and address lessons learned rather than using it to trump past success. The latter phenomenon is an indicator of a failure to learn the true lessons of experience. Unlike the development of FM 3-24/MCWP 3-33.5, which was infused with recent operational lessons, Air Force doctrine has evolved much more slowly since Desert Storm.

Following that operation, the Air Force fully embraced the teachings of Col John Warden. The central architect of the plan to paralyze the Iraqi state through his "Five Rings" theory, Warden was the product of an Air Force whose members were still strongly influenced by the difficult days of the Rolling Thunder campaign. He had created his theory, in part, due to the Air Force's institutional memory of Vietnam, even giving his plan the code name Instant Thunder to distinguish it from that bygone "Rolling" operation. In 1991 brilliant results in combat against Iraq now presented the Air Force an opportunity to broaden its intellectual scope—to search for new and better ways of employing airpower in a variety of environments. Many iterations of doctrine followed, but the Warden model lay at the heart of Air Force strategy, leaving the impression that the service was preoccupied with fighting its last war and trying in vain to make subsequent engagements fit its preferred theoretical model. For Andrew Hill and Stephen Gerras, this fact is unsurprising: "Dominant organizations have systems that focus organizational energy and attention on exploitation—that is, sustaining the status quo and continuing to improve what they already do."[12] Why consider new ways to perform close air support or niche mission sets when you can win the war by overflying the battlefield to targets 1,000 miles behind the front line?

Unfortunately for the Air Force, it could not replicate the success of Instant Thunder in the conflicts that followed. In reality, this drop in effectiveness should not have come as a surprise. An inability or unwillingness to change course in the aftermath of highly successful outcomes is "a reasonable result of success," as Hill and Gerras argue. "However, efficient exploitation often comes at the expense of continued learning and innovation."[13] Carl Builder notes that the Air Force should have seen the war to liberate Kuwait for what it was—a unique set of circumstances: "History may reveal that Operation Desert Storm was the final expression of an ending of a military era rather than the prototype for the next one."[14] Although perspectives differed on what Desert Strom meant for the future, leaders from across the security landscape praised the Instant Thunder air campaign for signaling that a revolution in military affairs (RMA) had occurred. The campaign's merits were undeniable, but its future applications proved that the model did not offer the long-term strategic advantages that many people predicted.

As Builder alludes to above, history demonstrates time and again that the shelf life of an RMA is fleeting. Napoleon, whose total war concepts also amounted to an RMA, ruled nearly all of Europe in 1811; in 1812 he invaded Russia with over

400,000 men (some sources estimate as many as 600,000 or more). By Christmas of that year, he had abandoned the approximately 30,000 surviving troops to counter a coup d'état in Paris—quite a legendary fall but a mistake destined to be repeated by Hitler after the Nazi war machine ushered in another RMA harnessing the power of armored warfare in the form of blitzkrieg. When an RMA's advantages begin to wane, whether through technology, politics, or maturation of the adversary, some individuals hold on for too long—often at great cost. American strategists and politicians are not immune from this syndrome, some of them still praising the 2011 Libyan bombing campaigns of Operations Odyssey Dawn and Unified Protector. Leaders who tout the effects of airpower in Libya must necessarily turn a blind eye to the terrorist breeding ground and unstable mess created by these campaigns.

Airpower's ability to "kick down the door" is often hailed as a fundamental capability. In fact, a significant limitation of total war from the air (and this metaphor) is that after you kick down the door, you usually have a reason to go inside and solve some sort of problem. If not, you probably need to apologize and rehang the door on its hinges. That said, if the United States has no intention of following a "decisive" airpower campaign with some form of ground presence or stabilizing force, then it leaves the broken door ajar for anyone to walk through, as it did in Libya. Fundamentally, the Air Force is constantly preparing for a technology-driven total war in both theory and practice, making it an attractive tool for quick "victories." It is a tool, however, with limits on its strategic effectiveness. Preparation for this, the most dangerous rather than the most likely course of action, is expensive and inherently risky: "A security strategy focused almost entirely on the rare, at the expense of serious thought and action regarding the common, is not the most useful framework to live with."[15] Despite the service's having far and away the best and most expensive training programs in the world, some individuals point out that if the Air Force is not a generation ahead technologically, then it cannot fully support the joint force or defend US interests.

Writing in 1995, then-major David Fadok (a Rhodes Scholar destined to command Air University) invoked military strategist Eliot Cohen in laying out a case against such a mind-set:

> Cohen cautions against such an analytical approach to military strategy since it regards the enemy as "a passive collection of targets," assumes that the enemy resembles us, and considers technology rather than human nature to be the controlling element in war. . . . Collectively, these assumptions "discourage the detailed study of one's opponent, his language, politics, culture, tactics, and leadership."[16]

The combined voices of Fadok and Cohen accurately predicted the struggles the US military would face in both Afghanistan and Iraq, where technological solutions to strategic problems remained elusive. The Army, Navy, and Marine Corps all have love affairs with various weapons systems, but these services are fundamentally tied to geographic domains. The land, sea, and littoral remain at the core of the Army, Navy, and Marines, respectively. Although the Air Force preaches air, space, and cyberspace as its environs, its real domain is technology.[17] Builder warns of the danger of this infatuation: "The Air Force, by contrast, has identified itself with the air weapon, and rooted itself in a commitment to technological superiority.

The dark side of this commitment is that it becomes transformed into an end in it-self when aircraft or systems, rather than missions, become the primary focus."[18] Nightly *CNN* broadcasts of precision weapons striking targets with pinpoint accu-racy became some of the lasting images of Desert Storm. Gen Norman Schwarzkopf and Lt Gen Charles Horner used this footage to great effect in press briefings as they demonstrated to the world the awesome might of the American military—especially the Air Force. As evidenced by its recent behavior in acquisitions, it is clear that the Air Force was heavily influenced by these images as well.

In his memoir, *Duty*, former secretary of defense Robert Gates describes the Air Force as "one of my biggest headaches."[19] Though far from a flattering description, it may be an understatement since these words appear in a chapter called "One Damn Thing after Another," in which he details his firings of Air Force Secretary Michael Wynne and Chief of Staff Michael Moseley.[20] Gates makes it clear that the dismissals were directly related to mishandling of the Air Force nuclear enterprise, but his frustrations with the service began early in his tenure, and his criticism on lack of attention paid to the wars at hand is a recurring theme in the book: "Nearly every time Moseley and Air Force Secretary Mike Wynne came to see me, it was about a new bomber or more F-22s."[21] Only two months before the firings, Gates ad-dressed students at Air University, the intellectual home of the Air Force, publicly voicing his frustration: "My concern is that our services are still not moving aggres-sively in wartime to provide resources needed now on the battlefield. I've been wrestling for months to get more intelligence, surveillance, and reconnaissance assets into the theatre. Because people were stuck in old ways of doing business, it's been like pulling teeth."[22] In the eyes of Gates, the institutional memory, the "old ways" of doing Air Force business, impeded combat operations. Long-standing beliefs, when interwoven through a large bureaucracy, create an inertia that is incredibly dif-ficult to overcome.

A Way Forward?

Military strategy and *military procurement* are terms that frequently appear in analysis critical of Air Force policy. In reality, they are both misnomers. Purely "military" strategy or procurement is a thing of the past. In the time of Napoleon and Clausewitz, when the general and the statesman were one and the same, the spirit of these terms took on a much different meaning. The messy politics of the twenty-first century plays a huge and overbearing role in nearly every facet of US Air Force policy and execution. Members of Congress are keenly aware of the bud-getary conundrum the Air Force faces, but they have little sympathy with the central message the service is sending via its budget proposals. When the service offers up the A-10, KC-10, U-2, or another emotionally charged and not yet replicated plat-form, it looks like it is playing chicken with Congress—a dangerous game it cannot win. Consequently, it is important to fully grasp how institutional memory affects the Air Force's decision making. Changes, especially those that affect jobs in con-gressional districts, will always be emotional. By articulating its brilliant history of adapting a force designed for total war to meet the demands of combat, the Air

Force might more successfully partner with Congress to push through the initiatives it holds dear.

Political influence is both inescapable and a causal factor in many of the service's apparent missteps, but it is not an excuse for finding new and innovative ways to think about its strategic decisions. Unfortunately, no matter how forward thinking the Air Force becomes, it will at times fail to understand the nuance of the politics that determine its future, but that too is understandable. Michael Clarke illuminates the sheer difficulty of understanding the how, what, why, or when of the political decision-making process, which further complicates the task for the military strategist or acquisitions official: "Any study of a state's foreign policy over a given period reveals that rather than a series of clear decisions, there is a continuing and confusing 'flow of action' made up of a mixture of political decisions, non-political decisions, bureaucratic procedures, continuations of previous policy, and sheer accident."[23] What, then, should the Air Force do in the face of a messy political process that drives strategy and procurement and leaves far too little room for decision making?

The answers, at least on the surface, are not overly complex. First, the 2015 *National Security Strategy* uses the word *partnership* 27 times in 29 pages of text.[24] It clearly states that working with allies of all strengths and sizes is central to American foreign policy: "We will help build the capacity of the most vulnerable states and communities to defeat terrorists locally. Working with the Congress, we will train and equip local partners and provide operational support to gain ground against terrorist groups. This will include efforts to better fuse and share information and technology as well as to support more inclusive and accountable governance."[25] To train, equip, and share information and technology with US partners, the Air Force must have a well-balanced infrastructure. Many nations are involved in the F-35 project, but none of them is a fragile or failing state. An acquisition plan that includes lower technology and lower-cost solutions to capability gaps gives the Air Force an edge in assisting those states that need it most—those that cannot dream of operating such expensive technologies. A shift of this nature should move the Air Force away from its focus on total war and towards a sustainable long-term strategy of collective defense initiatives.

When articulating strategy or acquisitions decisions, Air Force leaders must remain mindful of the service's institutional memory, which is heavily influenced by finding a technological solution to total war. In some cases, this context is of enormous benefit to the future security of the United States, as witnessed in the long-term technological buildup and then successful employment of these systems in Desert Storm. In others, as previously illuminated by Secretary Gates, the Air Force's institutional memory is a significant hindrance. Regardless of the situation, the service's leaders should take note that "history is replete with examples of militaries that failed due to their inability to transform organizations and culture, adopt new operational concepts, or leverage breakthrough technologies."[26] Ironically, this advice was penned by US Air Force chief of staff T. Michael Moseley a few months before he was asked to step down. A clear strategy to organize, train, and equip the force in a reasonable way that prepares the Air Force for its most likely, rather than its most dangerous, security challenges could reduce the influence of this memory and enhance US security partnerships around the globe. ✪

Notes

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